

NARRATIVE SUMMARY
March - 1968

Lake Whitefish
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FISHERIES DIVISION

Flathead Lake Fisheries Study

303302

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A major portion of the report period was spent in the analysis of data collected on Flathead Lake during the last year. The categories of investigation include the seasonal trends of fish distribution, general water chemical characteristics, variations of plankton production, and the thermal changes and patterns of the lake. The results of the work were presented and discussed at the annual D-J meeting in Bozeman. The completion reports for this project are being prepared.

The "winter sampling period" (January, February, March) was completed with the sampling of Big Arm and The Narrows. During the period, the heaviest concentrations of fish netted or recorded by sonar were found in the shallow waters along the entire shoreline of the lake. Spawning lake whitefish were found along the gravel beach areas in waters less than 15 feet while juveniles of this species remained off shore in waters deeper than 40 feet. The examination of spawned out lake whitefish and cutthroat trout stomachs found that they were filled with kokanee eggs that had been exposed by wave action. As the lake level continued to drop, new wash areas created excellent feeding and concentration areas for fish. The peak of the lake whitefish spawning occurred during the last week of January; the last ripe fish were taken in late February. All sizes of Dolly Varden were found at nearly all sample depths, surface to 100 feet. These fish did show some movement during March from the shallow shoreline areas to the deeper, 40 to 90 feet, areas of the bays and into the main areas of the lake. Lake trout were predominately found in Skidoo Bay area at depths from 90 to 120 feet. Two concentrations (extending for one half mile) of large unidentified fish were recorded by the sonar at 102 and 180 feet. The fish concentration at 180 feet is the deepest record we have found. Bottom depth in this area was 310 feet. Kokanee populations were recorded in most of the southern bay areas at depths between 42 and 60 feet. During calm evening hours large numbers of salmon can be seen surfacing. Spin casting during these hours is quite successful. Rough fish, primarily peamouth and squawfish, were taken in the shallow net sets, less than 40 feet of water. The largest numbers of these fish were taken in The Narrows area. Yellow perch, mountain whitefish, pygmy whitefish, largescale suckers and longnose suckers were collected but their numbers were too few to indicate distribution.

Water temperatures remained generally isothermic during the period, with only one degree (F.) change from the surface to 285 feet. The range in temperatures started at 36° F. in January, cooled to 34° during February and reached 36° by late March. Inlet waters from the Flathead River reached 43° during March.

Surface plankton collections were from two to three times greater than comparable samples taken last summer and fall. Qualitative plankton analysis is presently being undertaken by graduate students associated with the University of Montana, Yellow Bay Station. A special series of samples were collected and sent to a graduate student under Dr. Ruth Patrick of the Academy of Natural Sciences of Philadelphia, for analysis and verification. A reference collection of diatoms for Flathead Lake is being prepared.